

AMENDMENT TO THE CLAIMS

*Please cancel claims 1 and 4-15 without prejudice or disclaimer of the subject matter recited therein.* Applicants expressly reserve the right to file one or more continuation applications directed to the subject matter recited therein.

Please amend claims 21 and 24 as follows.

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

Claims 1-15 (Canceled).

16. (Previously Presented) A method for reducing diffusion of an N type impurity in a SiGe-based substrate, the method comprising steps of:

forming source and drain extension regions in an upper surface of the SiGe-based substrate; and

ion implanting an interstitial element into the source and drain extension regions to reduce vacancy concentration in the source and drain extension regions.

17. (Previously Presented) The method of claim 16, wherein the interstitial element is Si or O.

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18. (Original) The method of claim 16, further comprising a step of forming source and drain regions.

Claims 19-20 (Canceled).

21. (Currently Amended) The method of claim 16, wherein the step of providing the interstitial element comprises a step of ion-implanting the interstitial element onto ~~[[a]]~~ the SiGe-based substrate.

22. (Previously Presented) The method of claim 21, wherein the step of ion-implanting the interstitial element comprises a step of ion-implanting the interstitial element at an implantation concentration of approximately  $1 \times 10^{14}$  atoms/cm<sup>2</sup> to  $1 \times 10^{16}$  atoms/cm<sup>2</sup> and at an implantation energy of approximately 0.3 KeV to 100 KeV.

23. (Previously Presented) The method of claim 22, wherein a concentration peak of the interstitial element and a concentration peak of the N type impurity in the source and drain extension regions are formed at substantially the same depth from an upper surface of an Si cap layer.

24. (Currently Amended) The method of claim 23, wherein the concentration peak of the interstitial element is formed at a depth of approximately 10 Å to 20000 Å from the upper surface of ~~[[an]]~~ the Si cap layer.

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25. (Previously Presented) The method of claim 21, further comprising a step of annealing.

26. (Previously Presented) The method of claim 25, wherein the step of annealing is performed at a temperature of approximately 700° C to 1200° C for approximately 1 second to 3 minutes.

27. (Previously Presented) The method of claim 17, further comprising a step of forming source and drain regions in the upper surface of the SiGe-based substrate, the source and drain regions containing the N type impurity and overlapping the source and drain extension regions.

28. (Previously Presented) The method of claim 27, further comprising a step of providing an interstitial element in the source and drain regions.

29. (Previously Presented) The method of claim 17, wherein the step of reducing the vacancy concentration in the source and drain regions comprises a step of ion-implanting the interstitial element.